Geospatial Learning Pathways Presentation

Layer Browser Toolbar

by

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This is a BLM Geospatial Learning Pathways presentation. Layer Browser Toolbar is presented by the Montana State office. This toolbar, developed by the Oregon State office, provides users with standardized options to work with map layers in a GIS environment. Your presenters are Tim Smith and Jeff Nighbert, from the Oregon State
office.

SPEAKER - Tim: Hello. My name's Tim Smith. I'm a developer in Oregon for GIS. I'm with Jeff Nighbert, who will be chirping in over my shoulder, I think. Today we're talking about the Layer Browser and how we use it here in Oregon. And I'd like to just give a quick demo, tell you what we did recently to enable our district users to have their own setup here in a Citrix environment, centralized Citrix environment, and just take a look at the tool, in general.

The reason for the tool--several years ago, we, of course, wanted to share and use layer files to standardize symbology and store and have reusable symbology in settings. The issue came up for--in an SDE environment. When a user created a layer file, his or her connection properties went with that layer file. So, say, I created a layer file, and Jeff was using it that connected to a SDE data source. He would be, then, connected using my connection properties with my user-name and my permissions on all the tables in SDE.

And that was an issue for a number of reasons: one, people had different level of permissions to tables; two, our SDE administrator would never really know who was touching the database; and three, those connection files would expire, the password would expire, every 90 days, and those layer files would have to get updated.

So we decided to create a tool that would go out and look for the current user's connection to the database and switch those connection properties. So everybody was using their connection with their permissions, and they were in charge of keeping that up to date, their own connection to SDE. And that worked great. That was pretty nifty.

Since then, we have been allowed to create a generic login that never expires that all our layer files use. And so, from that aspect, the real, main reason for the tool sort of faded. And now, it's just sort of a nice interface for our users to use and have common language, sort of, instead of crazy, long feature class names and SDE. It just does county boundaries, you know, common-sense sort of names. And our users are sort of getting used to using it. And we'll take a look at it right now. So that was sort of the background of the tool.

The tool is compiled on a toolbar that you can--you can use the toolbar, or you can just drag the button from "Customize" anywhere you want. It's just a simple command. So let's open it up and take a look at it. Actually, I'm going to reload it and initialize it.

So it's really just a simple interface that allows us to organize our layers into sort of different groups that people can easily navigate, sort of common-sense names, and add a standard symbology to their map. You can simply double-click, and the layer file will get added. You can select many and add, and they'll get added. And so there's some settings on whether or not you want to have those terms visible when they get entered. **That's the basic functionality of the tool, is just the organization of layer files.**

We have some "Zoom to" or navigation tools that are also available in, generally, in ArcMap, but also here on the Layer Browser itself that you can zoom to. And those are sort of integrated into it. This is something we'd have to work through for Montana, to also make work in Montana, either that or sort of strip it out and have it optional.

There are some options available for the Layer Browser, and these were some settings that some of our users wanted as they moved up from working on their PCs in the district to a centralized Citrix environment. Our SDE data is in geographic coordinate system, and nobody, except for Jeff, likes that. So they don't like to look at data that way. So there's an option to just have default ArcMap functionality or to automatically set the spatial reference when they start to add data. So it's in their preferred projection. In this case, I have it set to zone ten UTM.

If you set a custom spatial reference, you also have the ability to set a custom extent, and it's just using the coordinate system specified above. And so that means, when you first add data, it's going to set the data frame to the spatial reference. It's also going to navigate to this bounding box. And, currently, that's our Roseburg District. So they--Roseburg users--would have to

set this. They go right to their district extent, don't have to zoom in or anything like that.

The other options we have are the visibility of layers when you add them. Sometimes people who make layer files don't set, like, scale dependencies correctly, so hydro starts drawing at the state level, and it takes forever. So I like to personally turn them off. When they get added to the map, they're turned off. So those are the options. I expect the options tabs to grow as people make requests and want to be able to customize their Layer Browser as much as they want. So I can see this expanding.

"Zoom to" tools, these access data layers in SDE. We can navigate to counties, districts, resource areas, grazing allotments and pastures, township section range, our different quads and HUCs; although, I don't know anybody who zooms to HUCs. An example of that would be--here's our township section range, and this will just navigate us somewhere where there's no data. There we go.

How this tool works and--it's loading directories and layer files just from a directory structure. And there's a backend table. There's a backend table that lives with the DLL when it's installed that will tell folks, or tell the Layer Browser where to look for layer files. In this case, we're the state office, and we're the default.

As we moved people up to Citrix, they want to be able to have their own organized layer files. People have different business in different locations. Coos Bay doesn't need to see range allotments, and Medford doesn't need to see a lot of forestry stuff. So we built in the ability for them to re-point the tool at their own collection of layer files that's relevant to their business need. And, so it's really basic. It just has a path. And we'll get to the layout path here any minute. But it's just a path to a folder, and we'll go look at that folder.

Here's that layers folder, and it's simply a bunch of directories. And in those directories will be the layer file. There's also a preview image that goes with it if you'd like to create those. And I'll show you that in a second.

It's a little bit--oh, I don't know. When we first developed the tool, we didn't like sort of the alphabetical order of things. So the solution was to put a number on the underscored number at the end of the directory. And this would be the order they were loaded into the tool. So, for example, under Administrative, Boundaries, then Reference, Political and Land Status. And so that just

forces order on a, what otherwise, would be an alphabetical directory.

The preview images--there's a tool for this, but it will create a little snapshot of your layer file so people can take a look at them and see what they're getting into. There's also a reporting function that will bring up sort of a description of what the layer file is and what the data sources are. Sometimes this acts a little buggy.

The ability--again, as we move people up to Citrix, they want to see their own stuff. This is the state office. It's the default. Roseburg is part of our pilot project, moving them up here. They have their own collection of layer files, and this will simply re-point the Layer Browser to them. And, you see, there's much less here, but this is what Roseburg runs, and they'll control what they see in here to meet their business needs.

Now once they've clicked that once, it's written in the registry. And next time they come in to use the tool, they don't have to reset that. It remembers, you know, to point to Roseburg. And you can always just reset the default if you want.

We have a rudimentary--an ability to create automatic layouts from your data frame. And we've just got some basic examples [examples on screen, no audio]. And this will switch over to layout view. It'll create a little inset map. It's got some basic elements on there that are just built into the template, update your scale bars, and put your legend over on the right.

The tricky part about layouts is the legend. You never really know what's in anybody's data frame and how to organize that into sort of a three or four-column legend that looks good. So the solution we came up with was just make landscape layouts where you could just stack a legend in a single column on the right or left side. Not the prettiest map in the world, but your forester who doesn't know GIS can click five to ten mouse clicks and have a map to put in his back pocket to go out in the field with. That was sort of the target audience and what we're shooting for there. I'd like to expand this and make this a little better, but this is--it's just sort of been stuck in how it's been for a few years.

The Layer Browser comes packaged on our OR Toolbar. There's some other tools available on it. These are just standard navigation tools we just stuck on there. And the four on the right are some of our other in-house tools: calculate acres/miles; a map signature tool that allows you to add some information about your map in your layout; map production tool, which allows you to

create a map series based on some selected polygon; and the polygon acres tool, which allows you to draw a polygon in the map and get some acreage calculated for you, some area calculated for you in a specific projection. So those would probably become packaged with the tool as well.

SPEAKER - Jeff: Here's something a little different for BLM. I appointed a full-time person to look after the Layer Browser and to work with all the users to make sure that it contains what they want to see and, also, to gather their requirements for programming enhancements or problems in the program. So that person is Ryan Kelley, and he works with all the people in BLM in Oregon to make sure that it's user-friendly, that it's working, that it does the job for them.

When they come from their district office up on Citrix, it is a whole different environment. And then finding the data is really hard here at the state office. So the Layer Browser is really key in having them able to find what they're looking for. In fact, I think that's how most people are going to find what they're looking for now.

SPEAKER - Tim: Some of our districts don't use this. They have their own thing set up, and that's fine. But others have been using it, and are dependent on it. And others are sort of getting turned on to it and really starting to use it. So nobody ever calls when it's up and running good. But when it breaks, I hear about it, and that means people are using it. That's always good to hear.

SPEAKER - Jeff: One thing you've probably have all heard about is map image services out on the Internet or something like that from ArcServer or Image Server or something like that. That can kind of get out of hand at times. So we kind of control that by providing, I guess, the corporately-sponsored image services through the Layer Browser. So they don't have to know all the little connections and everything to find their image server. It's right there in the Layer Browser all done for them.

We're connected to ESRIs and to the Forest Service's RSAC [Remote Sensing Applications Center] image services. Say you wanted to bring up one of those. You click on it and add it. Or if you want to look at National Geographic topo, we have that. We have anything that's sort of out there that I feel the users are going to use, but which one, like which topo should we use? So I have the three popular ones, but we found that it works pretty good. [screen only, no audio]

I don't know how many people use the image server from the Forest Service. We found that we can actually get the imagery faster from Salt Lake City to our desktop than we can from our own disk drives. So we have that. We sent our half-meter NAIP [National Agriculture Imagery Program] imagery to them. They loaded it up. Plus, they have their own Forest Service images that we can use. They have shaded relief. There's also all the ESRI ones where they have road network and all of that.

At 9.3.1, we're supposed to have access to Microsoft Virtual World where it has all of the Microsoft imagery and street maps and all that kind of stuff right there in ArcInfo for you.

SPEAKER - Tim: Yeah, that's nice. As far as making this work in Montana, we'd want to talk -- are you guys strictly a Citrix solution, or has everybody got their desktop ArcGIS?

SPEAKER - 1: Strictly Citrix.

SPEAKER - Tim: We just added, like I said, some stuff that's very specific to Oregon, Washington. We'd want to look at how to read this stuff and populate these menus from our backend table. And I think that's what we'd do. We'd populate something and populate something where you guys could have your own information here, and it would read it. Right now, these names are hard-coded in some menus in the tool. We'd have to look into genericizing a tool so it would just read the table and populate itself.

We probably also want to work and get--would there be any interest--I don't know if you have interest in the Layer Browser--but any interest in the "Zoom to" or navigation tool? I know a lot of users around here use them. If your data sort of matches what ours does, as far as district boundaries, LLI, counties--I'm not sure if you have grazing. Well, in Montana, you probably do. But that will plug in--

SPEAKER - 1: We have the "Zoom to" and stuff with the EasyMapper.

SPEAKER - Tim: Oh, all right. There you go.

SPEAKER - Jeff: Okay. So they're OK with that.

SPEAKER - Tim: So we may want to look at possibly stripping out some stuff from the Layer Browser itself as well as genericizing it for you guys if there's interest. So, I guess, are there any questions?

SPEAKER - 1: Are you saying that the "Zoom to" that's on the Layer Browser would have to be--had some programming issues as far as for what the layers have in them within the fields and stuff?

SPEAKER - Tim: Yeah. Well that's handled in a backend table, and here's that table because we had this set up here in the state office. It had SDE. In the districts, it hits their local, file based geodatabase, which are just replications of our SDE data. And it can be set up to run either way, depending on what type of data you were using. You would just populate for each type of -- "Zoom to" county, quad, whatever. You would simply populate a table with the right information. I could work with whoever to set that up.

SPEAKER - 1: I've done this before, I guess.

SPEAKER - Tim: Yeah. This one uses SDE. This is our instant primary field, and the feature class we're looking for is called "county name." Secondary field, that's just in case like we have two counties that have the same name. So it asks you which county do you really want, just sort of the tie-breaker field, does it work, what zoom type it is, and here's the feature class name. So we could simply update this table, I believe. We'd want to look at your data first to just reflect what's in your database.

SPEAKER - 1: Yeah, we've done this before - it's that piece of it.

SPEAKER - 2: I think we reviewed this a couple years ago. Wasn't there a way that you could add your own layer files in there, or is that just something you have to get put in to that file structure now to do that?

SPEAKER - Tim: thanks for reminding me. That's great. I forget what's in this tool. You also have the ability, you frankly, have the ability to go point the whole tool to your own collection of stuff and run your own show, but I don't know that many people do that. But you certainly can also add what we call a "My layer" stuff, and I'll go do that right now if I have some stuff somewhere on my computer. So you'll simply point this to a directory where you have--you can have

a couple directories, again, with the underscore number and your own layer file. So go down. Here's Tim's layers, and I just have some--I have no idea what this stuff is in there. But you could have several directories deep, and you could sort of have--if you specialize in something, and you want to see it, you can just add it to the tool. Thank you for reminding me about that, actually.

SPEAKER - Jeff: Yeah. We've used it a couple times, that function, when we have a project, like a big RMP, where we have a bunch of people wanting to look at the RMP data. We'll set up a group for them and a special path for them. Like look at the WOPR. That's the Western Oregon Plan [Revisions]. And there's all the layers there. And so that's how we want--the people who run WOPR just--they're not GIS people. They go and just go to the WOPR layers and start pulling them up that way. So that has worked out good for us.

Sounds good. I mean, we use it. We think it works really well.

I think having a person working with all of the users on a pretty full-time basis has been really helpful too. He also writes documentation or changes and updates the documentation when things change. And then if people have a problem, they have somebody they can call besides me, or Tim.

SPEAKER - Tim: Are you guys in an SDE environment?

SPEAKER - 1: Yes.

SPEAKER - Jeff: Do you have a generic sort of login that a bunch of people use, or are people responsible for their own username and maintaining a password?

SPEAKER - 1: We have a couple of generic passwords or logins.

SPEAKER - Tim: And everybody's got that connection, sort of connection file available in their database sources, or whatever it's called?

SPEAKER - 1: Not really. What I've done is I made it available, and then I just hard-code in my programs that way, so I didn't have to keep changing programs and stuff.

SPEAKER - Tim: Yeah. And that password never expires?

SPEAKER - 1: Right.

SPEAKER - Tim: How this sort of works is it'll go out--I forget if it even goes out and looks if it just finds a generic one. But everybody should have--in our office--just a generic connection to our vector database, and it's got the generic username, and it's got the password that never expires. And I believe everybody's got to have this connection file available in their profile. I'm not positive about that.

SPEAKER - Jeff: Yeah, you have to.

SPEAKER - Tim: Do you?

SPEAKER - Jeff: So when you log into the Citrix first time, you run a little script, and it solves it for you.

SPEAKER - Tim: There you go.

SPEAKER - 1: So there's a script that solves that for you, as far as each user, or what?

SPEAKER - Tim: Steve Salas wrote a little python script that will go grab a copy of the file and move it to their profile.

SPEAKER - 2: You didn't just hard-coat it in the program then.

SPEAKER - Tim: No, no.

SPEAKER - Jeff: And we have that--it's actually a tool that's in the toolbox. So they can go get it any time if they think they've gotten their profile corrupted or something.

I think it's under OR Tools. That's it right there.

SPEAKER - Tim: Yeah. Steve Salas wrote this. We have several different generic user accounts and logins in the different databases, and he can just go request one.

SPEAKER - Jeff: And since you already have it--

SPEAKER - Tim: Oh, here you go.

SPEAKER - Jeff: It says –

SPEAKER - Tim: Yeah, I already have one.

SPEAKER - Tim: So, again, the legacy of this thing was that it originally went out and was searching your profile for a valid connection to the database that the layer file pointed to. And we just sort of made it work with the generic stuff. And, like I said, I think it still looks for the generic connection in your profile. Any other questions?

SPEAKER - Jeff: We're trying to make things better for our users, and this is one way we think it'll work better. We have a user documentation that I could give you a link to.

SPEAKER - 1: Okay.

SPEAKER - Jeff: I would need to send it to you. It's on our SharePoint site for centralization.

SPEAKER - 1: All right. Thank you very much for your time.

SPEAKER - Jeff: Yeah. Thank you.

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